IN THE DRAWINGS:

Please enter the attached corrected drawing Fig. 11, in which "24b" is being changed into "24a" to designate the LARGE-AREA BRIGHTNESS LEVEL SAMPLING, to replace Fig. 11 as originally filed. A Letter to Draftsperson is also submitted herewith.

REMARKS

The above amendments to the above-captioned application along with the following remarks are being submitted as a full and complete response to the Official Action dated June 21, 2006. In view of the above amendments and the following remarks, the Examiner is respectfully requested to give due consideration to this application, to indicate the allowability of the claims, and to pass this case to issue.

Status of the Claims

Claims 6 and 12 are under consideration in this application. Claims 6 and 12 are being amended, as set forth in the above marked-up presentation of the claim amendments, in order to more particularly define and distinctly claim applicant's invention.

All the amendments to the claims are supported by the specification. Applicant hereby submits that no new matter is being introduced into the application through the submission of this response.

Prior Art Rejections

Claims 6 and 12 were rejected under 35 U.S.C. § 102(e) as being anticipated by US Patent No. 6,710,818 to Kasahara et al. (hereinafter "Kasahara"). This rejection has been carefully considered, but is most respectfully traversed.

The imaging system including a solid-state CMOS imaging device 10 and a signal processing semiconductor integrated circuit 20 for processing read-out signals of pixels 110 from said solid-state CMOS imaging device 10 of the invention (for example, the embodiment depicted in Figs. 11 and 12; p. 30, 2nd paragraph; p. 31, 2nd paragraph), as now recited in claim 6, comprises: first level detection means 24b which detects brightness on a first area shown in Fig. 12b (32 pixels * 1 line) set up on an imaging area of said solid-state CMOS imaging device, said first area comprising a pixel area having a width smaller than a half period of a brightness difference caused by flicker (p. 29, lines 21-22; *"light and dark spots (or difference in brightness)"* p. 3, lines 4-5); second level detection means 24a which detects brightness on a second area shown in Fig. 12a (192 pixels * 96 lines) which is larger than said first area, said second area comprising a pixel area in which said brightness difference caused by flicker is substantially smoothed (p. 29, lines 16-17); judgment means which judges turning-on-and-off of a light source illuminating in accordance with an object to be imaged on the basis of detection levels of said first and second level detection means 24b, 24a; a control unit 30 for setting up an intensity of a read-out signal (*"the stored light*

amount (the intensity of the read-out signal of the pixel)" p. 19, lines 3-4) for each pixel of said solid-state CMOS imaging device 10 by means of processing in accordance with a program which controls both a transmission gain of said read-out signal of each pixel and a number of charge storage lines constituted by horizontal scanning lines as a unit (p. 19, lines 8-11; p. 14, lines 5-8; p. 15, lines 7-9; p. 17, lines 1-3). The judgment of the turning-on-and-off of said light source illuminating in accordance with the object on the basis of the detection levels of said first and second level detection means 24b, 24a is performed by processing in accordance with the program in said control unit 30 which judges whether a difference between maximum brightness values MAXLs and minimum brightness values MINLs of the second area over a predetermined number (e.g., 8) of frames remain less than a predetermined value (e.g., 8.6%), and whether maximum brightness values MAXSs and minimum brightness values MINSs of the first area over a predetermined number of frames satisfy a predetermined relation (e.g., judgments 3-4 on p. 33, lines 7-10) (p. 31, line 17 to p. 34, line 1).

The invention recited in claim 12 is directed to imaging system of claim 6, and further recites that the first area which is a predetermined area in a frame and that the second area is set up on an imaging area of said solid-state CMOS imaging device 10, and is a predetermined area in the frame. As the first and second areas which are predetermined areas in a frame, the invention can distinguish clearly from changes in photographic surroundings of the object and detect variation in the turning-on-and-off of the illumination light source by the first and second detection means (p. 39, lines 3-11).

The present invention provides the program to set up the charge storage time for each pixel to be the turning-on-and-off period of the light source illuminating the object or the integral multiple thereof so as to prevent flicker due to the illumination light source such as the fluorescent lamp appearing as light and dark spots in the frame. Further, the charge storage time is changed over at the same step as the turning-on-and-off period of the light source illuminating the object or at the step equal to the integral multiple thereof to set up the stored light amount for each pixel variably stepwise and difference of the stored light amount between steps is interpolated by continuous gain control of the read-out signal of the pixel, so that automatic iris adjustment is made widely and smoothly while preventing flicker due to the illumination light source such as the fluorescent light effectively. Moreover, the invention detects variations in brightness in the small and large areas set in one frame, turning-on-and-off of the illumination light source is judged while distinguishing from change in photographic surroundings of the object clearly. Consequently, the flicker canceling

processing is made to prevent picture quality reduction (p. 38, line 8 to p. 39, line 11).

Applicants respectfully contend that Kasahara fails to teach or suggest such "a program (1) which controls both a transmission gain of said read-out signal of each pixel and a number of charge storage lines constituted by horizontal scanning lines as a unit; and (2) which judges whether a difference between maximum brightness values MAXLs and minimum brightness values MINLs of the second area over a predetermined number (e.g., 8) of frames remain less than a predetermined value (e.g., 8.6%), and whether maximum brightness values MAXSs and minimum brightness values MINSs of the first area over a predetermined number of frames satisfy a predetermined relation (e.g., judgments 3-4 on p. 33, lines 7-10)" as of the present invention.

Regarding the (1) feature of the present invention, Figs. 16-17 and the relevant descriptions from col. 15, line 51 to col. 16, line 26 were relied upon by the Examiner to teach the control unit of the invention. However, Kasahara merely controls an AGC gain control signal and a shutter speed control signal, but not "controls both a transmission gain of said read-out signal of each pixel and a number of charge storage lines constituted by horizontal scanning lines as a unit" according to the present invention.

Regarding the (2) feature of the present invention, the structure in Fig. 1 and the relevant descriptions of col. 8, lines 5-32, col. 2, lines 30-55 of Kasahara were relied upon by the Examiner to teach the first level detection means, the second level detection means and the judgment means of the present invention. However, Kasahara's illumination detection apparatus in FIG. 1 merely uses an averaging unit 6 to average integration results of pixel level video signals of each horizontal line of a plurality of frames, then uses the dividing circuit 4 to divide the averaged horizontal line value with horizontal line integrated values outputted from an integrating circuit 1, and then uses a flicker judging circuit 5 to conduct frequency analysis on the division result to detect whether the illumination flicker exits in the inputted video signal. In short, Kasahara only uses frequency analysis, but not "judging differences between the maximum brightness values and the minimum brightness values of the second area over a predetermined number of frames remain less than a predetermined value, or the maximum brightness values and the minimum brightness values of the first area over a predetermined number of frames satisfy a predetermined relation" according to the present invention.

Regarding the feature uniquely recited in claim 12, Applicants respectfully contend that Kasahara fails to teach or suggest such "first and second areas which are predetermined areas in a frame" as in the invention.

In contrast, the averaging circuit 3 of Kasahara's imaging system averages data (SUMn-1,i SUMn-2,i SUMn-3,i) that correspond to the ith line at frames n-1 to n-3 (col. 8, lines 41-45) to define the first and second areas such that the first and second areas vary along with the data, rather than being predetermined areas in a frame as in the invention.

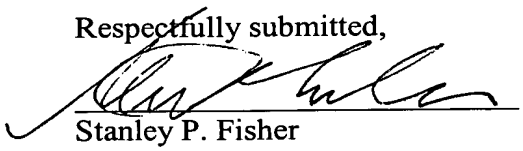
Kasahara fails to teach or suggest each and every feature of the present invention as recited in the independent claims 6 and 12. As such, the present invention as now claimed is distinguishable and thereby allowable over the rejections raised in the Office Action. The withdrawal of the outstanding prior art rejections is in order, and is respectfully solicited.

Conclusion

In view of all the above, clear and distinct differences as discussed exist between the present invention as now claimed and the prior art reference upon which the rejections in the Office Action rely, Applicants respectfully contend that the prior art references cannot anticipate the present invention or render the present invention obvious. Rather, the present invention as a whole is distinguishable, and thereby allowable over the prior art.

Favorable reconsideration of this application is respectfully solicited. Should there be any outstanding issues requiring discussion that would further the prosecution and allowance of the above-captioned application, the Examiner is invited to contact the Applicants' undersigned representative at the address and phone number indicated below.

Respectfully submitted,



Stanley P. Fisher
Registration Number 24,344

Juan Carlos A. Marquez
Registration Number 34,072

REED SMITH LLP
3110 Fairview Park Drive, Suite 1400
Falls Church, Virginia 22042
(703) 641-4200

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